

**GOVERNMENT OF INDIA
ATOMIC ENERGY
LOK SABHA**

UNSTARRED QUESTION NO:2436
ANSWERED ON:30.11.2016
Conversion of Sea Water into Potable Water
Karunakaran Shri P.

Will the Minister of ATOMIC ENERGY be pleased to state:

- (a) whether the sea water could be converted into potable water by means of atomic energy;
- (b) if so, whether the Government has set up/proposes to set up any such project;
- (c) if so, the details thereof;
- (d) the per litre cost of conversion of sea water into potable water by atomic energy; and
- (e) the steps taken/proposed to be taken by the Government for large scale conversion of sea water into potable water?

Answer

THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (Dr. JITENDRA SINGH):

(a) Yes, Sir.

(b)&(c) Desalination of seawater is possible by using Thermal Desalination Technology and/or Membrane Technology like Reverse Osmosis (RO). Thermal and/or Electrical energy from Atomic Power Station or Nuclear Research Reactor/s can be used for this purpose. A total of 63 lakh litres per day capacity seawater desalination plant has been setup as Nuclear Desalination Demonstration Project (NDDP) at Kalpakkam, Tamil Nadu and is under regular operation producing 45 lakh litres of water per day by Thermal Desalination process, drawing nuclear low pressure steam from the existing and operating Madras Atomic Power Station (MAPS). Also, 18 lakh litres of water per day is being produced using membrane based technology using grid electrical energy of MAPS. The plant is the largest operating hybrid nuclear desalination plant in the world. The plant produces dual quality of water – water for high-end industrial applications of quality less than 10 mg per litre of TDS (Total Dissolved Solids) and potable water of less than 500 mg per litre of TDS for drinking and other applications.

(d) The sea water desalination plant set up at Kalpakkam is a demonstration plant. The cost of water produced depends upon many factors like cost of electricity, quality of required end product, choice of technologies, seawater quality, local infrastructure and logistics etc. On an average, the cost of conversion of seawater into desalinated water is about 10 paise per litre of water produced.

(e) At present, there is no proposal before the Government to set up sea water Desalination plant using Atomic Energy.
